



Accessibility for All

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Microsoft Developer Advocate



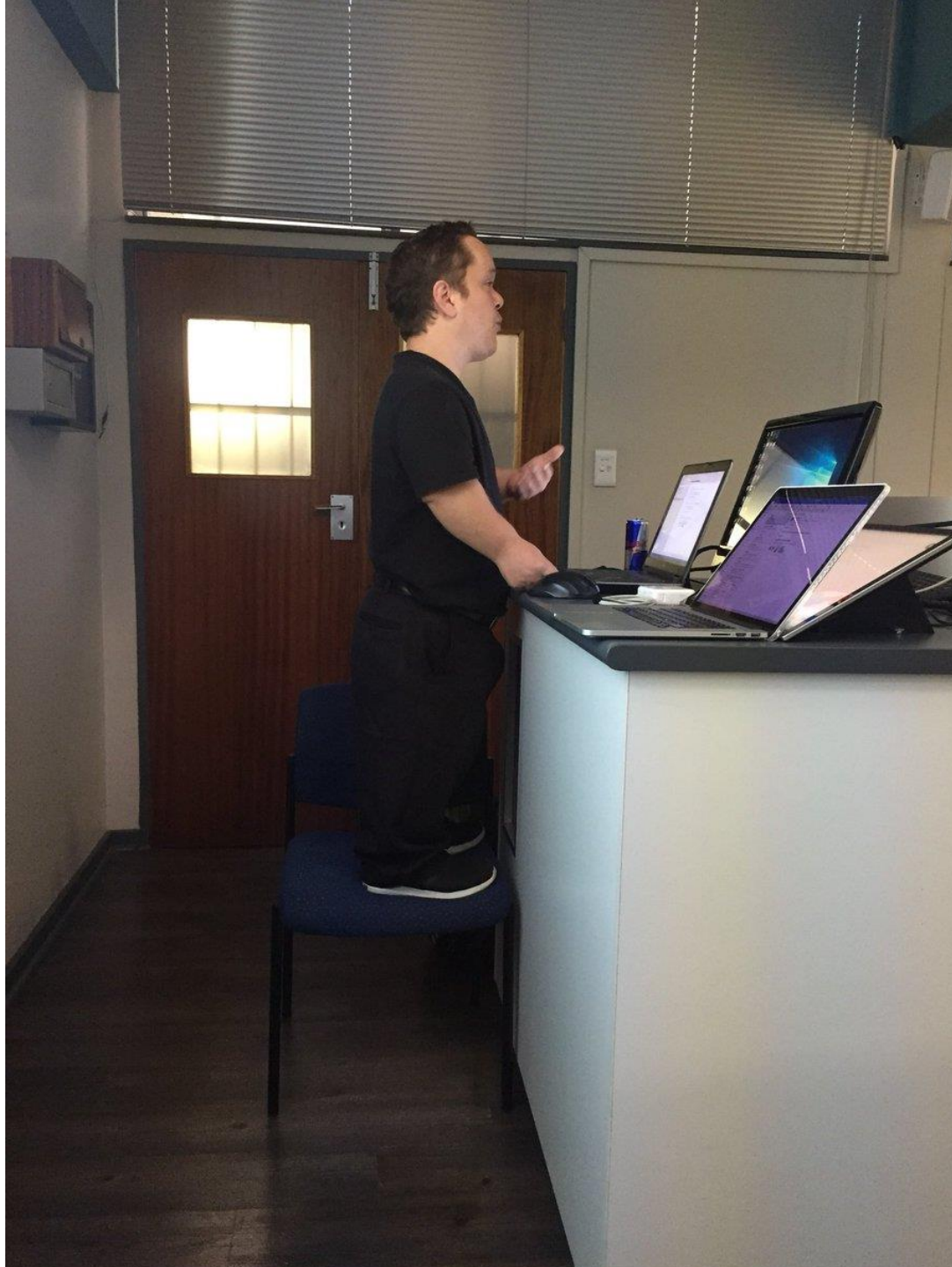
@rorypreddy



My Car Pedals



Bolt on



I felt left out



The Agile Manifesto

Manifesto for Agile Software Development

We are uncovering better ways of developing software by doing it and helping others do it.
Through this work we have come to value:

Through this work we have come to value:

Individuals and interactions over processes and tools

Working software over comprehensive documentation

Customer collaboration over contract negotiation

Responding to change over following a plan

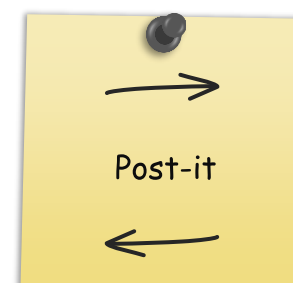
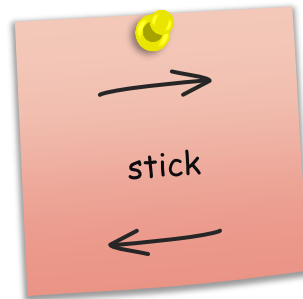
That is, while there is value in the items on the right, we value the items on the left more.

Open office





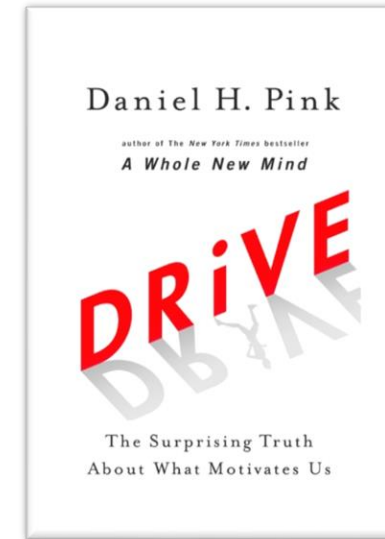
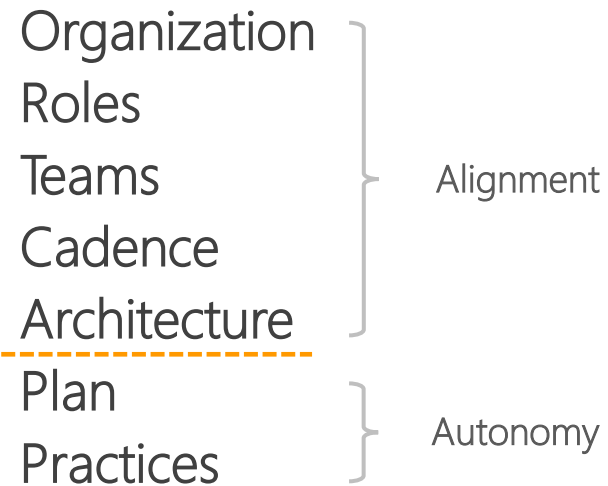
HOW TO CLEAN A WHITEBOARD



The Hydra



Aligned Autonomy



*"Let's try to give our teams three things ...
Autonomy, Mastery, Purpose."*

Ikigai



Empathy



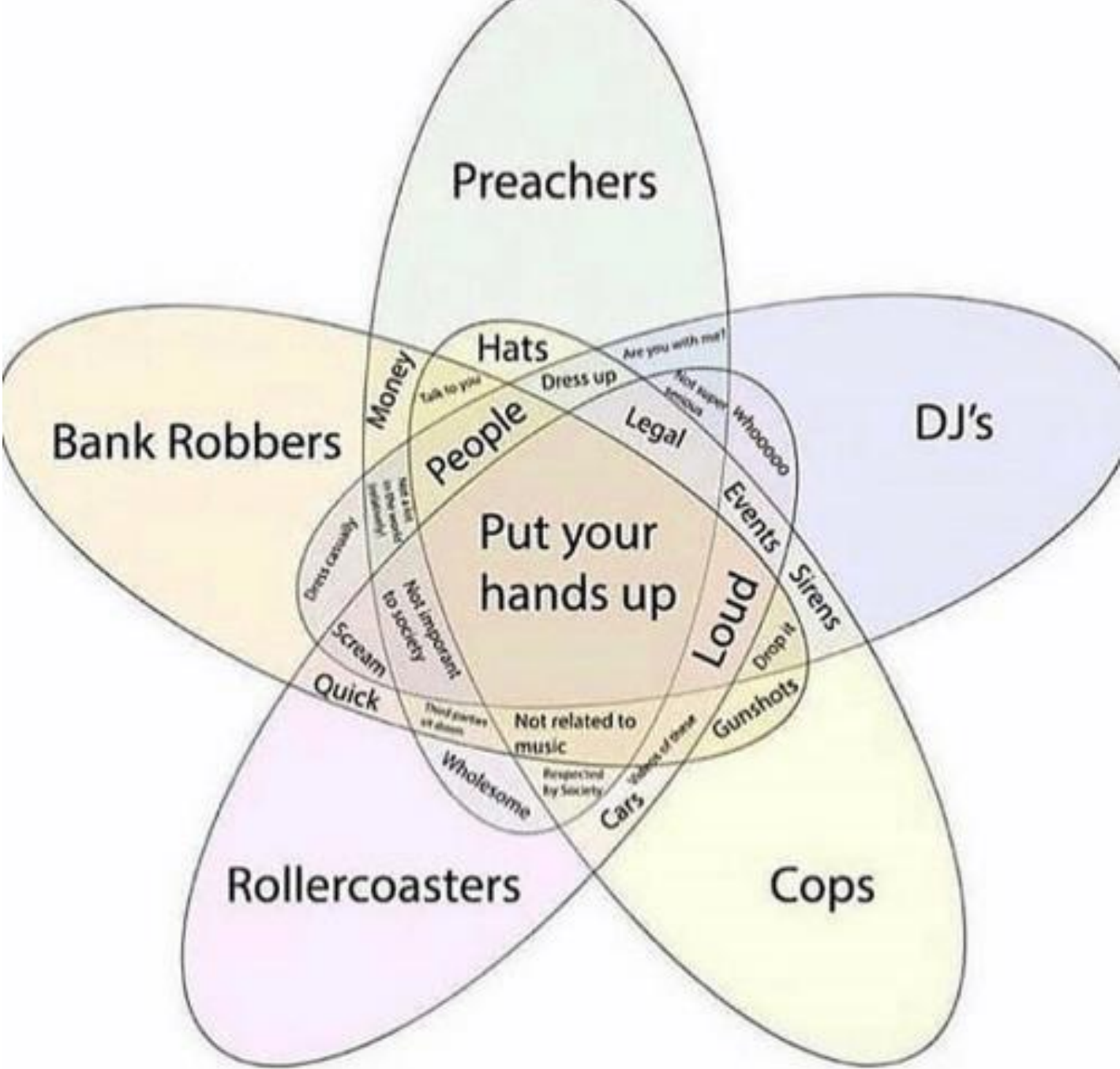


ME

NEW SIDE PROJECT

**ALL MY
OTHER UNFINISHED
PROJECTS**

Put your hands up



Empathy Bubble



Fail



The plan

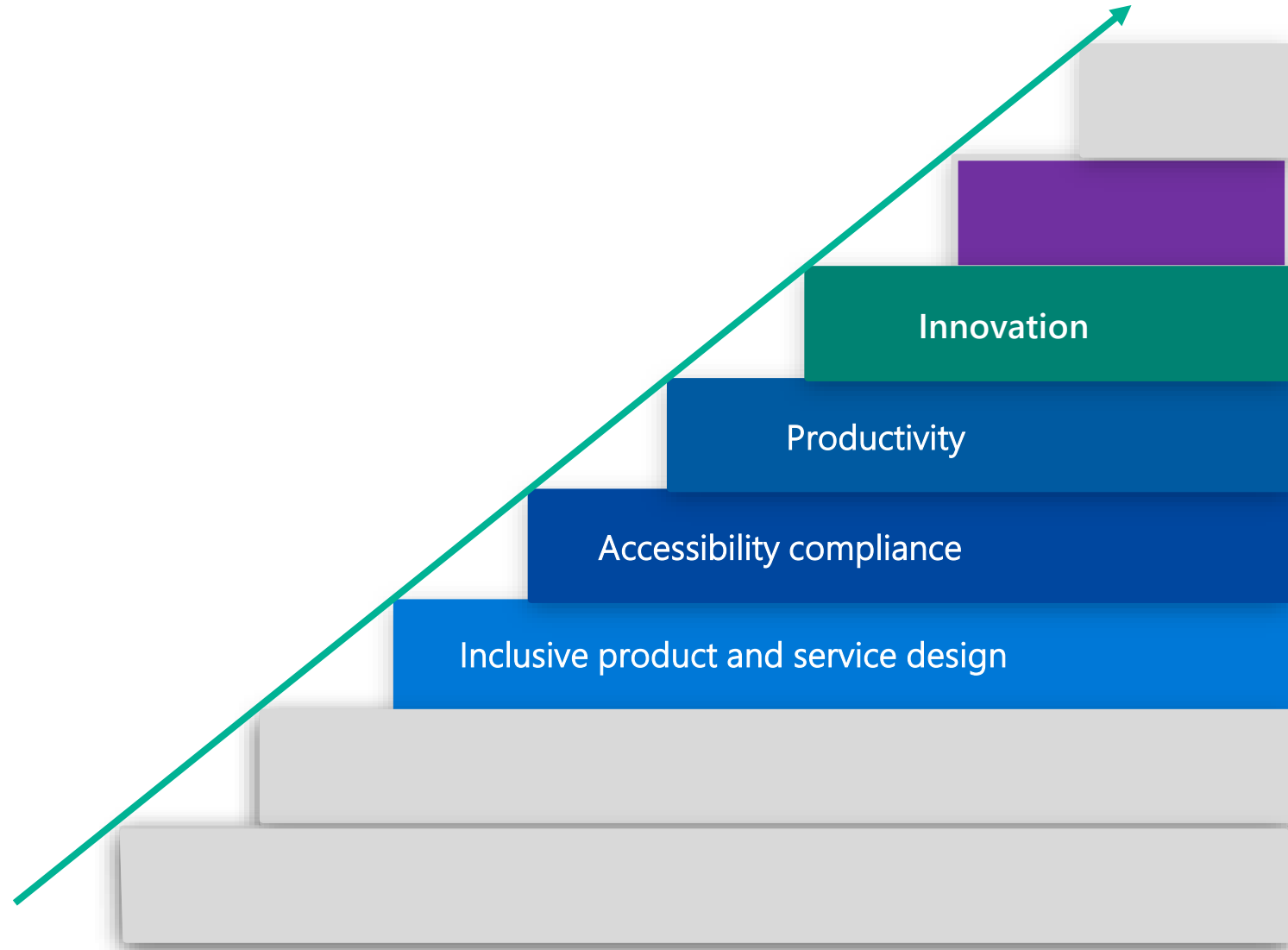
- Understanding Your Organization's Unique Accessibility Motivators
- Set Achievable Interim Milestones
- Implement Tools
- Measure, Improve and Automate

Accessibility



Accessibility is...

...the design of products, services, and environments so that everyone, including people with disabilities, can fully experience them.



Disability



Personal
health
condition

Disability



Mismatched
human
interactions

WCAG – Compliance levels

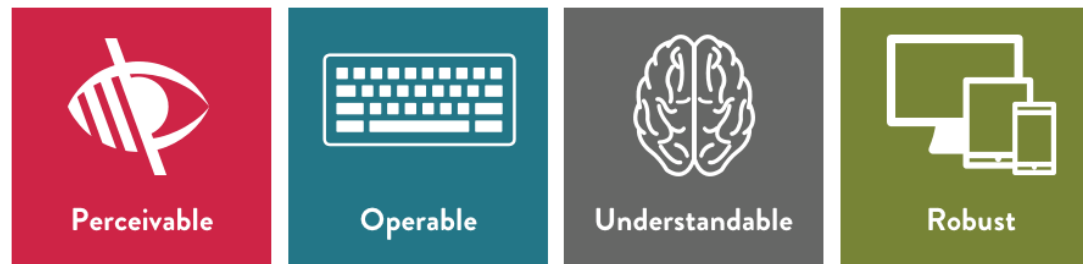
Level A—deals with the most basic web accessibility features

Level AA—signifies the biggest and most common barriers for disabled users

Level AAA—addresses the highest (and most complex) level of web accessibility

WCAG - principles

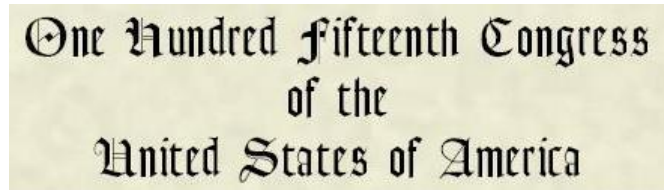
- Perceivable – *can you see it*
- Operable – *can you use it*
- Understandable – *can you understand it*
- Robust – *it won't break future technologies*



Motivators



Legislation



US 21st Century Integrated Digital Experience Act



EU parliament directive on digital accessibility



Quality of life

For most of human history, we've put our innovative capacity into improving the quantity of life. Because we're living longer, our focus is starting to shift toward improving our quality of life

--Bill Gates







Claudia



54 years old social worker

Sight impaired (partially sighted)

Uses a screen magnifier and changes colours to increase contrast

Chromebook help

If you're lost, go back to the list left to re-orientate yourself

Ashleigh



24 years old arts graduate and administrative assistant

Severely sight impaired (blind)

Uses a screen reader

Chromebook help

Screen reader quick guide:
Use Tab to move from links and form elements to the next. Shift + Tab to go back. Search + Arrow Right/Left to read text in between those.

Ron



82 years old, retired

Multiple conditions: arthritis, losing his hearing, cataracts, hip replacements

Doesn't use any assistive technology

Chromebook help

As Ron is not very technical, don't use anything which might help. For example, don't zoom into the page and don't use the keyboard to navigate.



<https://alphagov.github.io/accessibility-personas/>

Inclusive design steps

1. Recognise exclusion
2. Solve for one, extend to many
3. Learn from diversity

Persona Spectrum



One arm



Arm injury



New parent



Permanent 26K



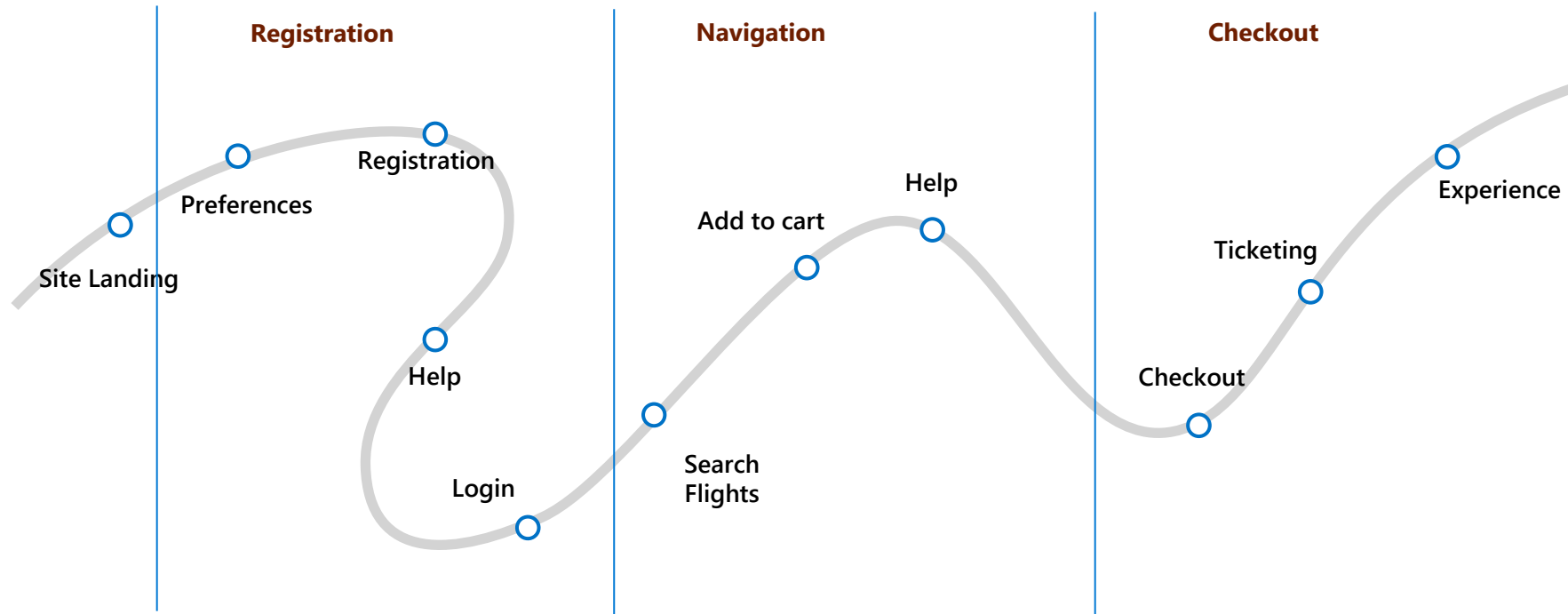
Temporary 13M



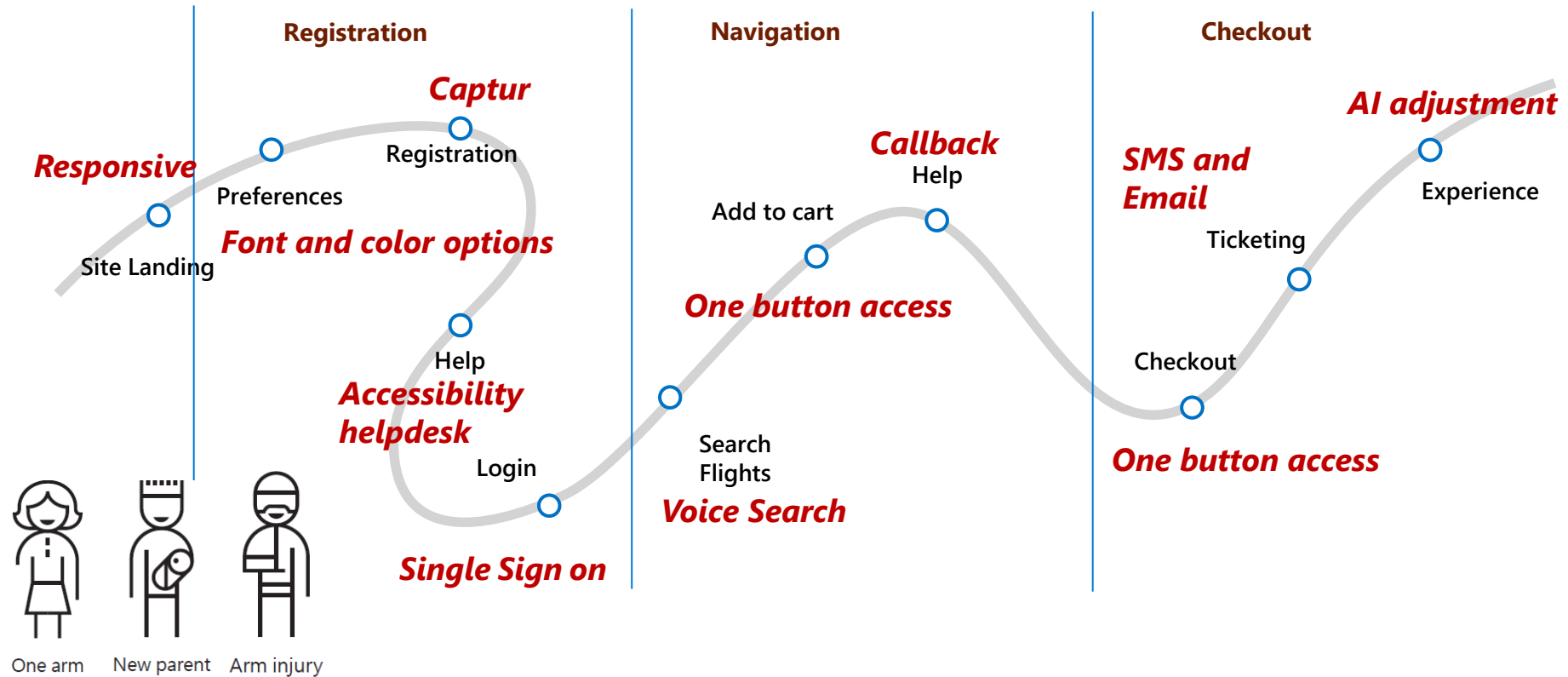
Situational 8M

Total: 21M+

Ticketing scenario



Apply Personas

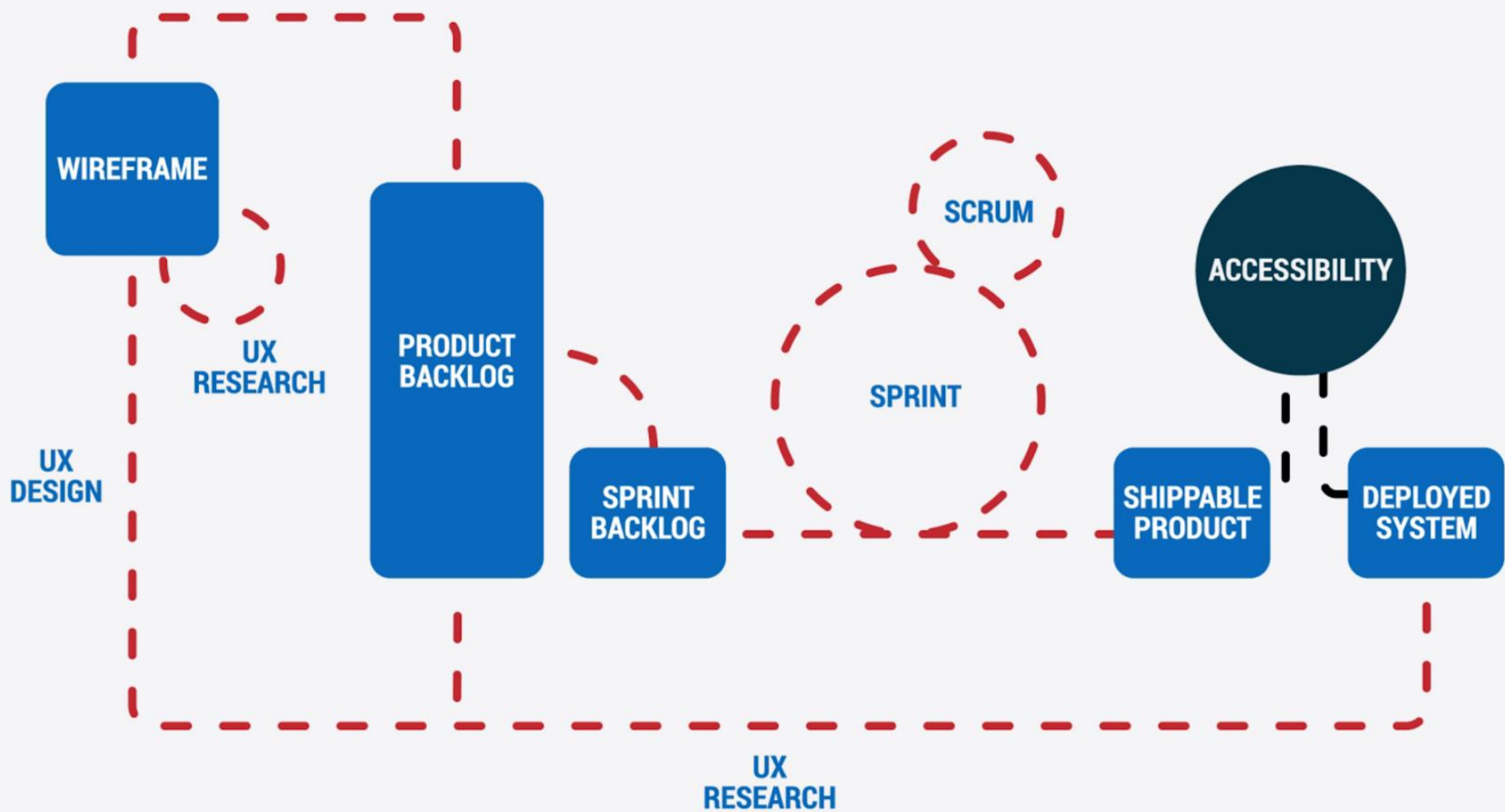


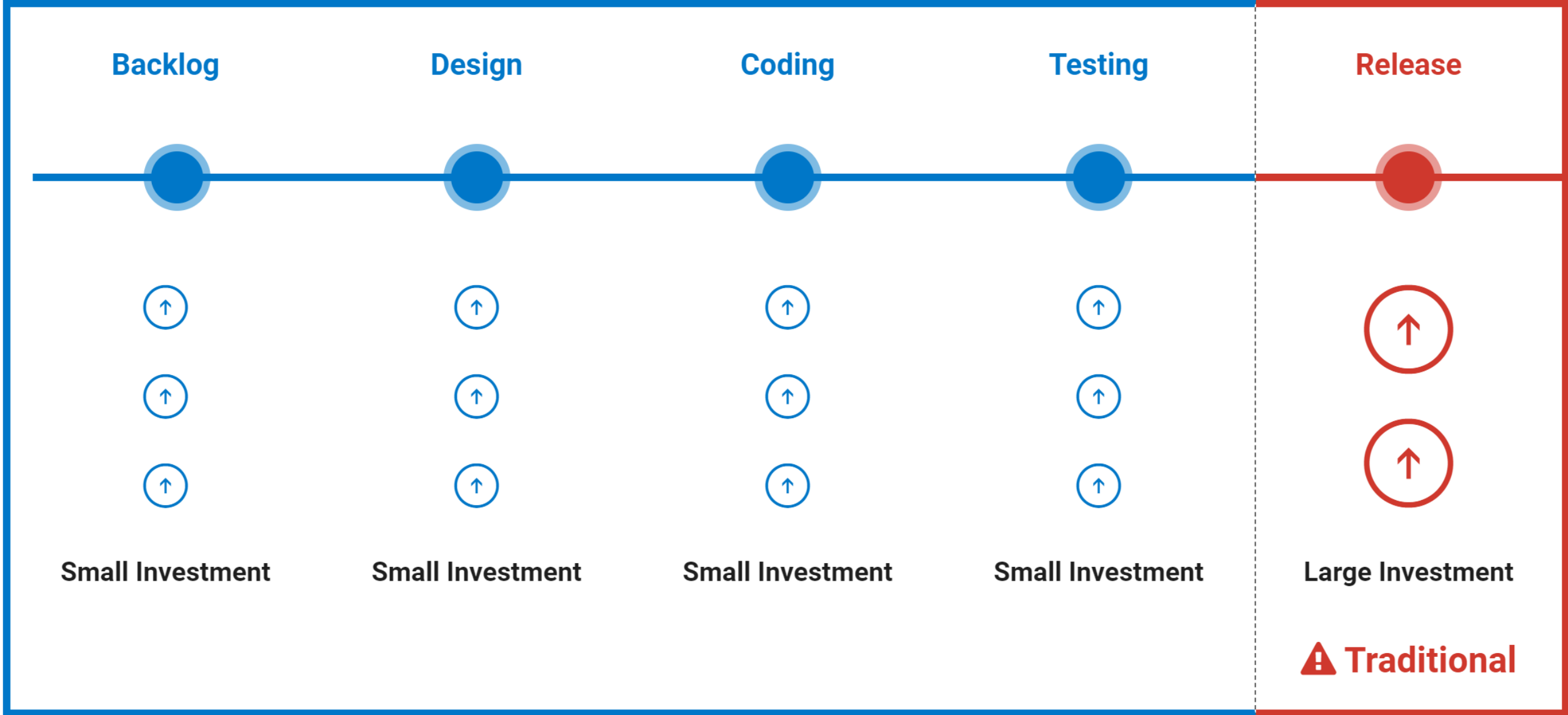
Empathy Transformation Practices

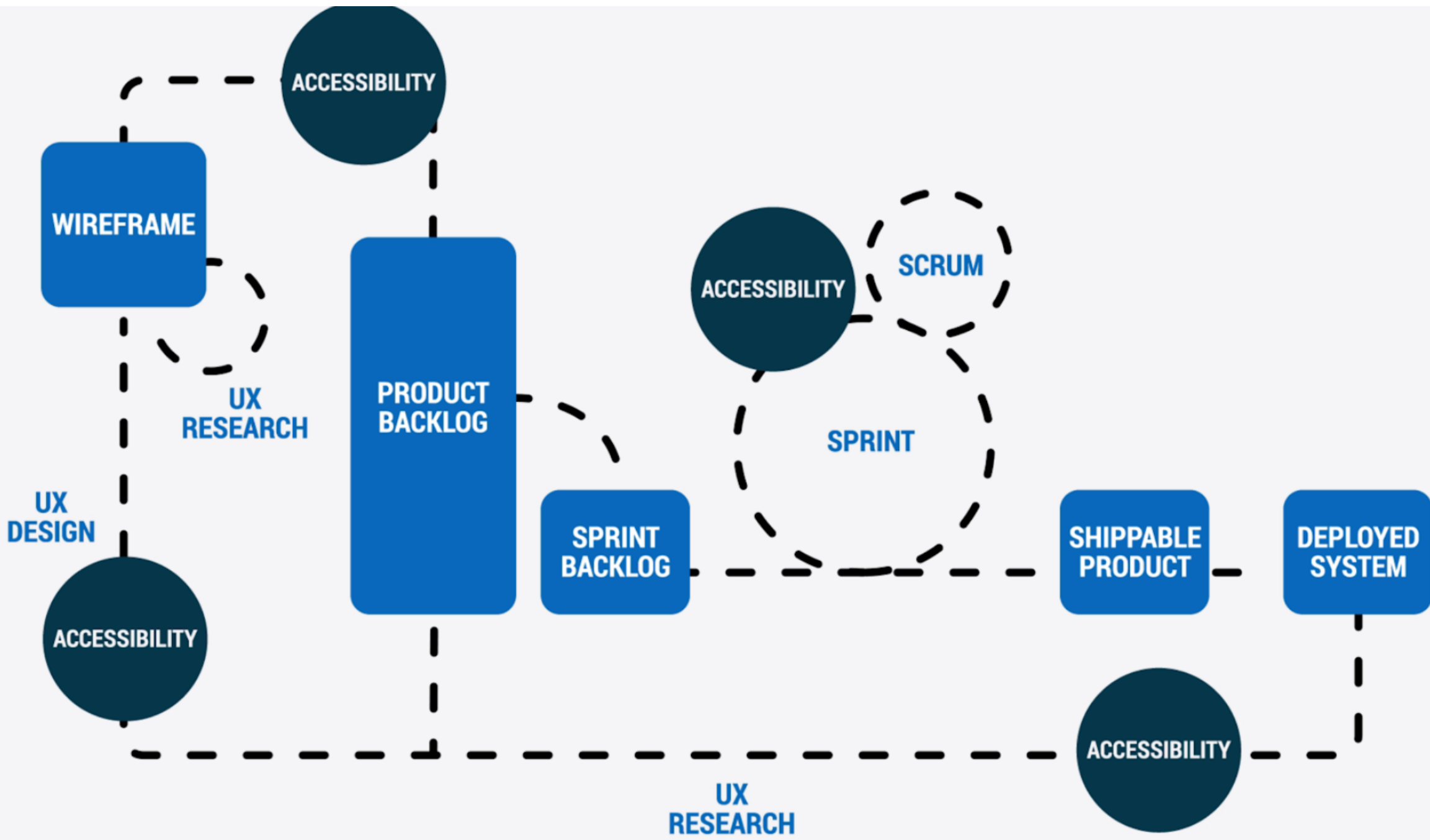
- Create a central team to manage the transformation
- Execute an empathy program to drive motivation.
- Make high-quality learning resources available and integrate these into onboarding.
- Form a team of accessibility coaches to coach agile teams.
- Create an accessibility dashboard to measure progress.

Milestones

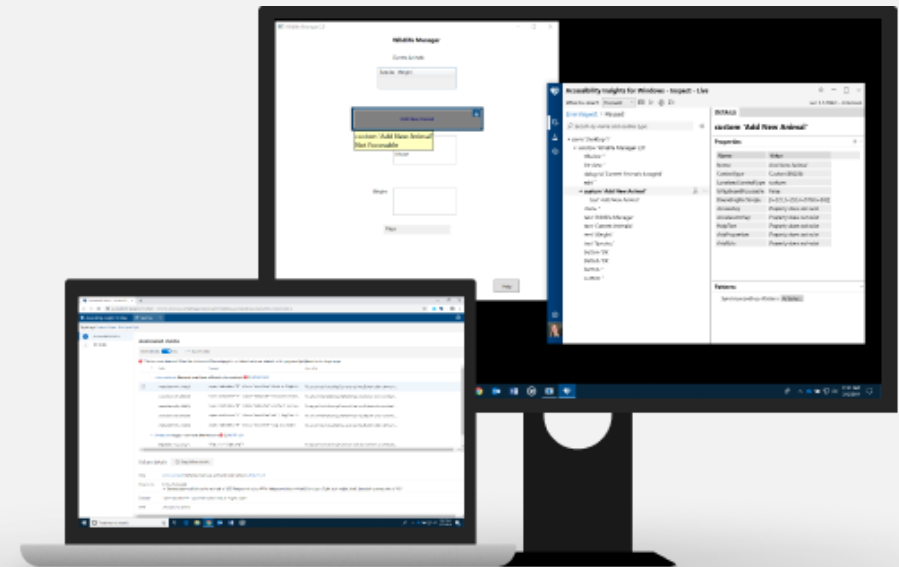


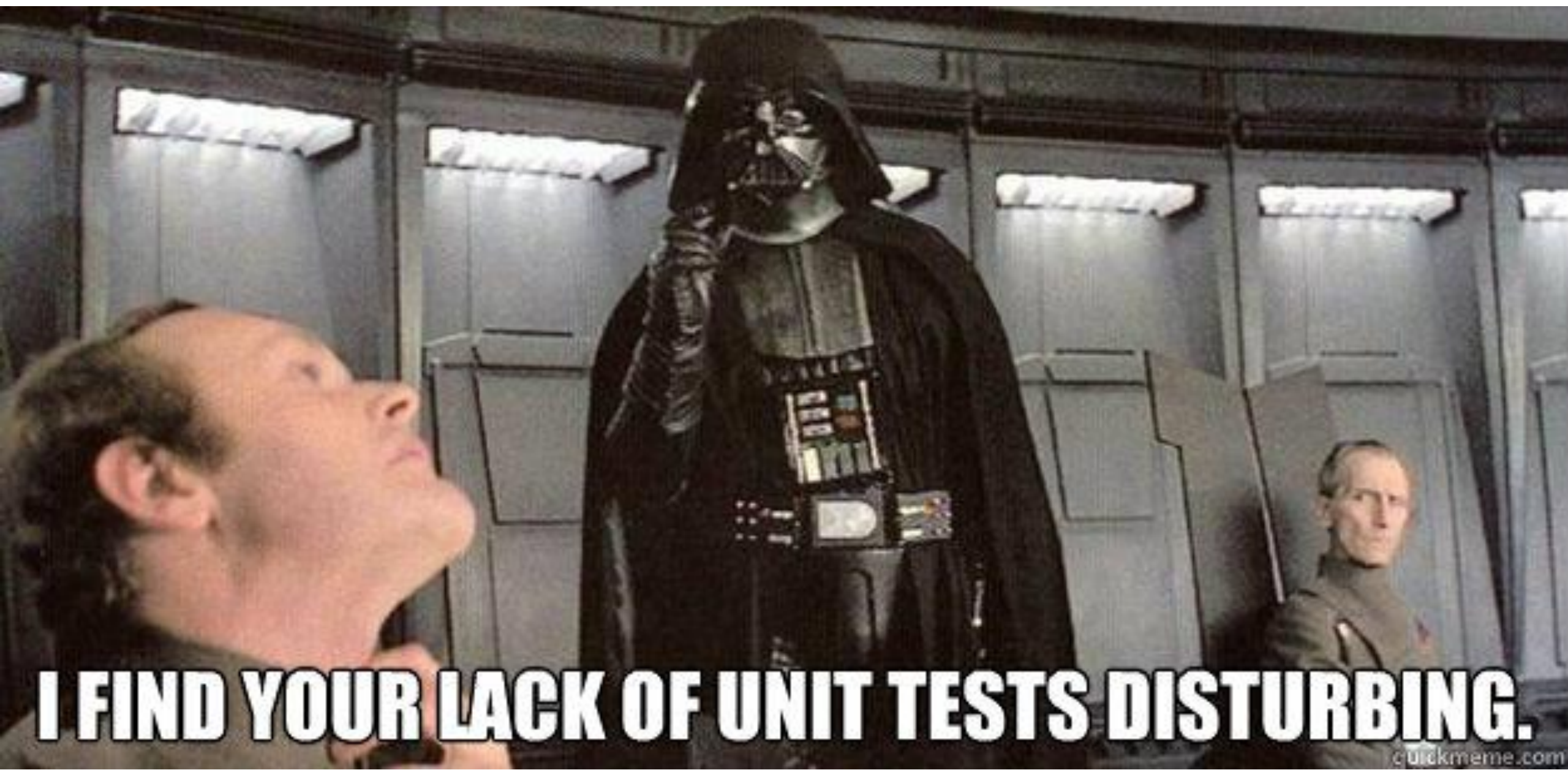






Tools

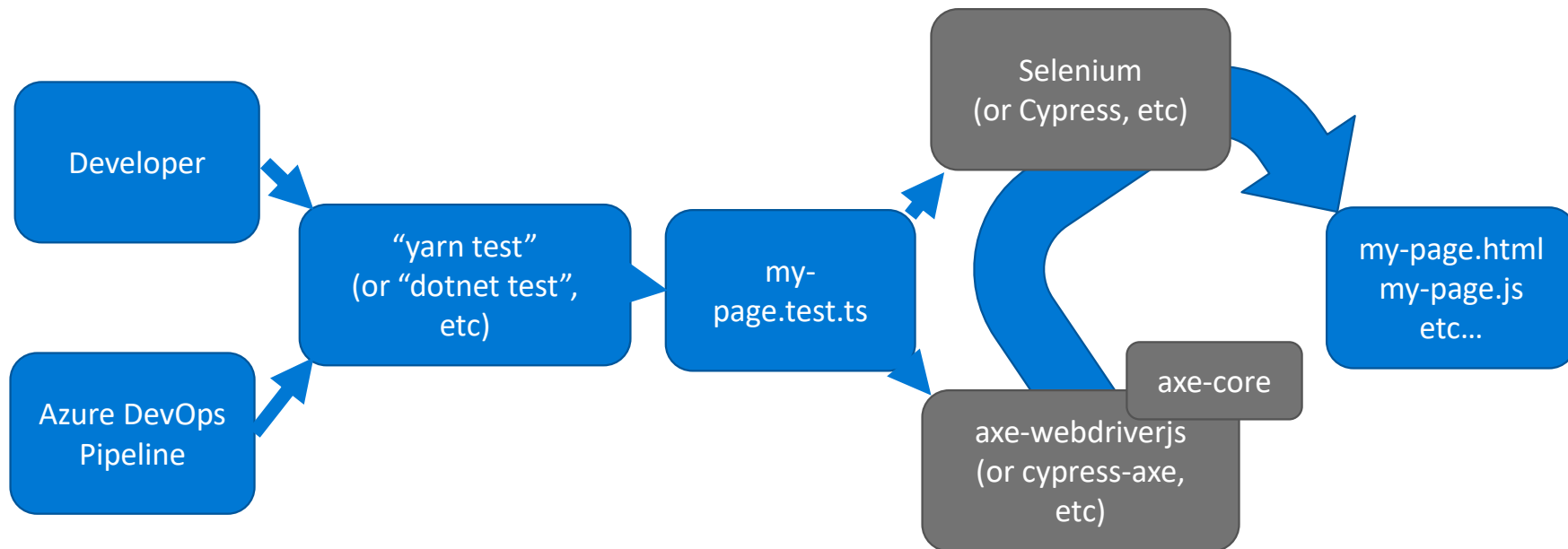




I FIND YOUR LACK OF UNIT TESTS DISTURBING.

Scanning with axe-core

- axe-core is a javascript library (npm package)
- scans a rendered DOM
- reports back results as json
- Same engine that Accessibility Insights uses



Azure DevOps

/ Pipelines / [failing example] csharp-selenium-webdriver-sample / 20200115.8

Search

axe-pipelines-samples

Overview

Pipelines

Pipelines

Releases

Jobs in run #202...

[failing example] csharp-selenium-webdriver-sample

Jobs

Job win-chrom	1m 30s
Initialize job	3s
Checkout	4s
install .NET Core	13s
dotnet restore	34s
dotnet test	33s
Component Det	<1s
Post-job: Check	<1s
Finalize Job	<1s

dotnet test

View raw log

```
132
133 Results File: d:\a\_temp\VssAdministrator_fv-az130_2020-01-15_21_50_38.trx
134
135 Test Run Failed.
136 Total tests: 4
137     Passed: 3
138     Failed: 1
139 Total time: 22.5409 Seconds
140 ##[error]Error: The process 'C:\hostedtoolcache\windows\dotnet\dotnet.exe' failed with exit code 1
141 Info: Azure Pipelines hosted agents have been updated to contain .Net Core 3.x SDK/Runtime along wi
142 Some commonly encountered changes are:
143 If you're using `Publish` command with -o or --Output argument, you will see that the output folder
144 ##[error]Dotnet command failed with non-zero exit code on the following projects : d:\a\1\s\csharp-
145 Async Command Start: Publish test results
146 Publishing test results to test run '16690'.
147 TestResults To Publish 4, Test run id:16690
148 Test results publishing 4, remaining: 0. Test run id: 16690
149 Published Test Run : https://dev.azure.com/accessibility-insights/axe-pipelines-samples/_TestManage
150 Async Command End: Publish test results
151 Finishing: dotnet test
```

<https://github.com/microsoft/axe-pipelines-samples>

- A **axe-pipelines-samples** +
- Overview
- Pipelines
- Builds
- Releases
- Library
- Task groups
- Deployment groups
- Compliance

✓ **#20190802.1: Bump lodash in /typescript-selenium-webdriver-sample (#49)**

Triggered aug 1 at 6:00 pm for dependabot[bot] microsoft/axe-pipelines-samples master 1ffaaba

Logs Summary **Tests** Scans

Summary

1 Run(s) Completed (1 Passed, 0 Failed)

4

Total tests

+4

4

Passed

0

Failed

0

Others

100%

Pass percentage

↑ 100%

14s 240ms

Run duration ⓘ

↑ +14s 240ms

Test run Column Options

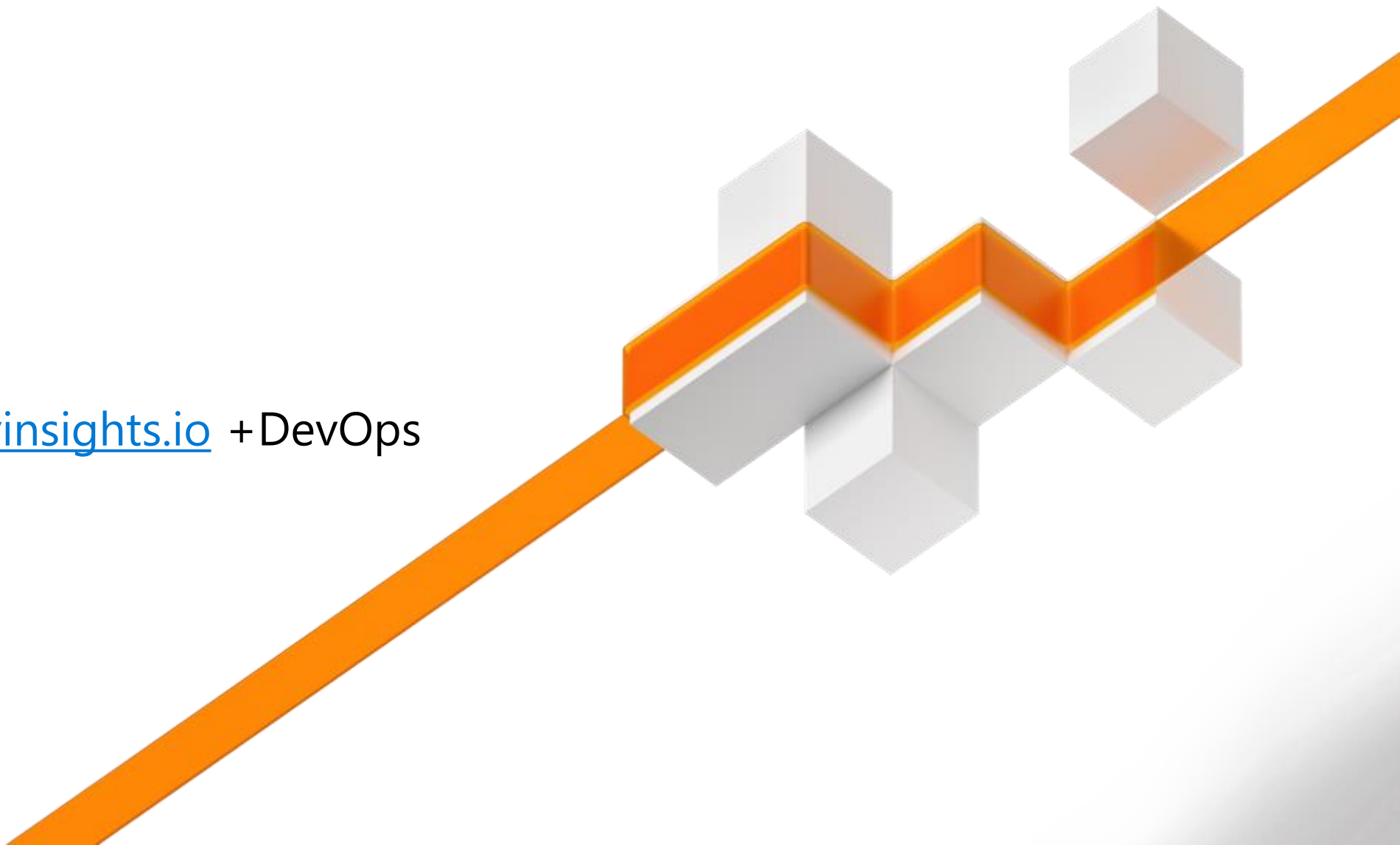
Filter by test or run name

Tags Test file Owner Outcome

Test	Duration	Failing since	Failing build	Tags
✓ typescript-selenium-webdriver-sample (4/4)	0:00:14.240			
✓ index.html has no accessibility violations in the h1 element	0:00:08.657			
✓ index.html has no accessibility violations outside of the known example violations	0:00:00.290			
✓ index.html has only those accessibility violations present in snapshot	0:00:00.290			
✓ index.html has only accessibility issues stored in our snapshot corresponding to only wcag2a and w	0:00:00.276			

Demo

<https://accessibilityinsights.io> + DevOps



axe-matchers

BeAccessible
exclude known inaccessible subtree
check known inaccessible page
check known accessible subtree

cucumber
mixes the DSL into World (PENDING: Not yet implemented)

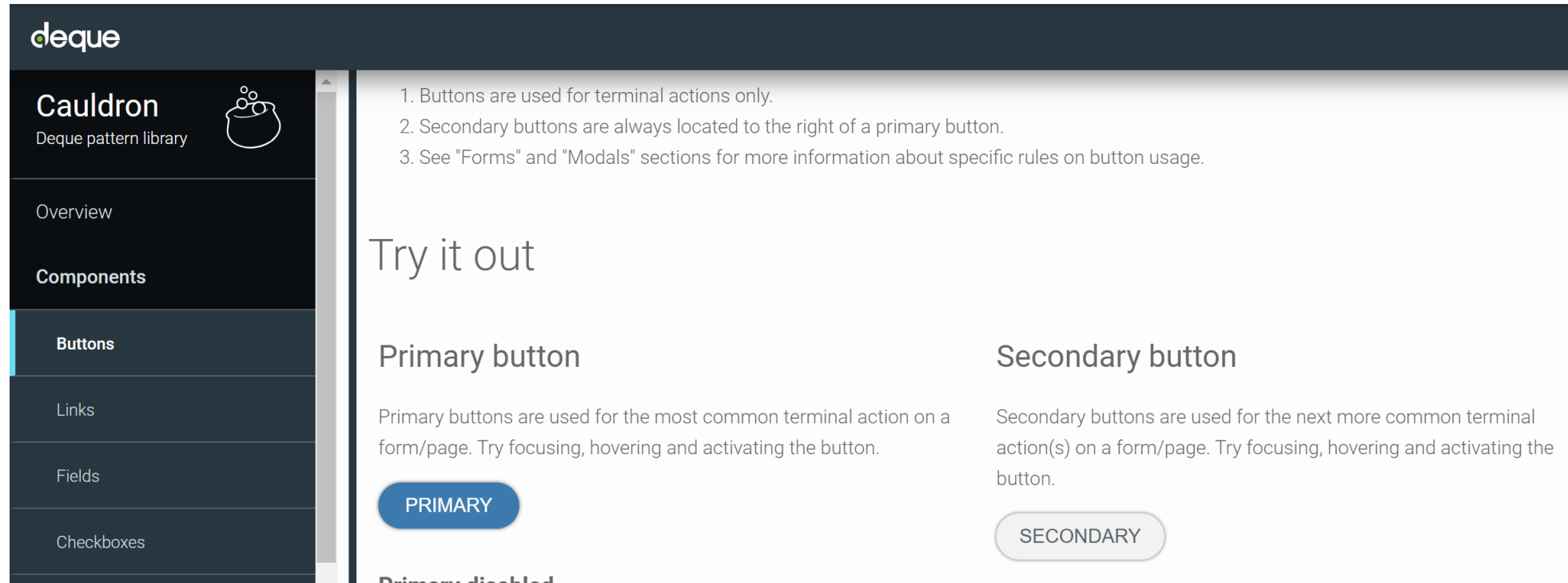
Axe::DSL
can be mixed in (PENDING: Not yet implemented)
can be used directly (PENDING: Not yet implemented)

using minimal Selenium-Webdriver setup (using firefox)

```
2
3 Background:
4   Given I am a visitor
5     When I visit "http://abcdcomputech.dequecloud.com/"
6
7   # The steps for the following scenarios are provided by the axe-matchers gem
8
9   Scenario: Test whole page (known to be inaccessible, should fail)
10    Then the page should not be accessible
11
12   Scenario: Test working sub-tree (should pass)
13    Then the page should be accessible within "#intro"
14
15   Scenario: Test broken sub-tree (known to be inaccessible)
16    Then the page should not be accessible within "#topbar"
17
```

<https://github.com/dequelabs/axe-matchers>

Pattern libraries



<https://pattern-library.dequelabs.com/>

Team Practices

- Include Users with Disabilities in Research
- Communicate Design Intent
- Leverage a pattern library
- Leverage automated testing library
- Automate accessibility testing
- Measure progress
- Accessibility in retrospectives



Conclusion

1. Empathy
2. Shift Left
3. Automate

<http://microsoft.com/accessibility>



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